**Elizabeth Montagu and *Isabelle de Charrière / Belle van Zuylen***

Dr Daniel Archambault and Kasper Krawczyk, Swansea University

In collaboration with the *Correspondance d’Isabelle de Charrière / Brieven van Belle van Zuylen*Project; we have developed a dynamic bipartite data visualisation pilot that captures Elizabeth Montagu’s and de Charrière’s social connections through time [1]. This temporal graph offers perspectives on how the epistolary networks of both prominent salonnières developed and changed throughout the period investigated, and furthermore if there are overlapping contacts or communities. In terms of network analysis, the pilot used epistolary networks (letters as edges) to identify a temporal interaction pattern between the correspondents (users as nodes). The user can slow down the time line, choose a group of correspondents to identify direct or indirect (through mentions in letters) contacts between Elizabeth Montagu and Continental social networks.

Drawing such graphs, as seen through the computer science lens, are very well suited for visualising social networks. These can be seen as static, representing a snapshot in time, or dynamic, where the changes in a network through time are viewed as if they were movie frames, resulting in a temporal graph. To leverage the advantages of a network perspective of these data, we decided to visualise Montagu’s milieu with the DyNoSlice [2,3] algorithm, which lends itself to an intuitive understanding of the social network structure through pushing unrelated actors apart and pulling ones that are related together as their social circles evolve. These interactions can be modelled as “forces” moving nodes about, and, in our case, socialites’ prolific correspondence served this very purpose. The algorithm has graph nodes, which represent people, seek an equilibrium between forces drawing connected people who together (for example, authors and recipients of letters), and pushing those who do not exchange letters - apart.

Given the vast amount of letters written by Elizabeth Montagu, we only referred to correspondents and mentions in the years 1763, 1775/76 when Montagu went abroad, she went to Spa in 1763 and France in 1776. The data from the Charrière letters are from the life time of her correspondence. With the development of the Elizabeth Montagu Digital Edition, we will feed in more data.

[1] <https://charriere.huygens.knaw.nl/>. We thank the British Academy for funding this pilot project.

[2] P. Simonetto, D. Archambault and S. Kobourov, "Event-Based Dynamic Graph Visualisation," in IEEE Transactions on Visualization and Computer Graphics, vol. 26, no. 7, pp. 2373-2386, 1 July 2020, doi: 10.1109/TVCG.2018.2886901.

[3] Arleo, A., Miksch, S. and Archambault, D. (2022), Event-based Dynamic Graph Drawing without the Agonizing Pain. Computer Graphics Forum, 41: 226-244. <https://doi.org/10.1111/cgf.14615>